

549,908

PATENT COOPERATION TREATY

PCT

REC'D 03 JUN 2005

WIPO

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PE18135PCOO		FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/SE2004/000633	International filing date (day/month/year) 26-04-2004	Priority date (day/month/year) 15-05-2003	
International Patent Classification (IPC) or national classification and IPC H04L12/28			
Applicant Telefonaktiebolaget L M Ericsson (publ) et al			

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 4 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
 - ☒ (sent to the applicant and to the International Bureau) a total of 7 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
- This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand 08-10-2004	Date of completion of this report 17-05-2005
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer Lisbeth Andersson /LR Telephone No. +46 8 782 25 00

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE2004/000633

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))
☐ publication of the international application (under Rule 12.4)
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:

pages 1 - 38 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ the claims:

pages _____ as originally filed/furnished

pages* _____ as amended (together with any statement) under Article 19

pages* 39 - 45 received by this Authority on 08 - 10 - 2004

pages* _____ received by this Authority on _____

☒ the drawings:

pages 1 - 17 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
☐ the claims, Nos. _____
☐ the drawings, sheets/figs _____
☐ the sequence listing (*specify*): _____
☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
☐ the claims, Nos. _____
☐ the drawings, sheets/figs _____
☐ the sequence listing (*specify*): _____
☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SE2004/000633

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-31</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-31</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-31</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

This report is based on the amended claims 1-31 received by this Authority 08-10-2004.

Documents cited in the International Search Report:

D1: US 5596439 A

D2: US 4470138 A

D3: "Capacity regions for wireless ad hoc networks" Toumpis S, Goldsmith A, 2002, Piscataway, NJ, USA, IEEE, USA, ISBN 0-7803-7400-2

The object of the invention is to target performance enhancements with respect to throughput and delay in wireless relaying networks where multiple users share a common communication medium [see the description on page 4 line 25 to page 5 line 5].

D1, which is regarded as being the closest prior art, discloses a radio frequency communication system in which a relay station is used to aid communication between two parties, and more particularly to an improvement allowing more efficient use of the available channel resource. For example, a terrestrial line-of-sight radio communication between two terminals, using a relay radio to connect them (such as in a tethered aircraft or a radio tower).

A first signal is generated and stored at a device. The signal is transmitted from said device to a relay station. The relay station receives the first signal and sends a composite signal to the device, said composite signal containing a copy of the first signal and a second signal.

.../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V

The second signal is detected by the device using interference cancellation with the stored first signal on the received composite signal [see the abstract, page 1 lines 1-25, claim 1 and figures 1 and 5].

The subject matter of independent claims 1 and 16 is considered to involve an inventive step because it is not considered obvious that a person skilled in the art would use another signal than its own generated signal in the last step, in the method described in D1, when the interference cancellation takes place.

The cited documents D1-D3 is considered to represent the general state of the art.

Accordingly, the invention defined in claims 1-31 is novel and is considered to involve an inventive step. The invention is industrially applicable.